Facts About Illinois' Polychlorinated Biphenyls (PCBs) Advisory

Q: What are polychlorinated biphenyls (PCBs)?

A: PCBs are a group of more than 200 similar man-made chemicals that were used as insulating fluid for electrical equipment like capacitors and transformers. They are oily liquids or solids, clear to yellow in color, with no smell or taste. More than 1 billion pounds of PCBs were manufactured in the United States. Because of the health effects associated with exposure, commercial production of PCBs ended in 1977. In 1979, the U.S. Environmental Protection Agency (USEPA) banned all use of PCBs; however, PCB removal or replacement is not required for equipment that already contained these chemicals. PCBs are still present in many products made prior to 1979. Because these contaminants were used so widely and take a long time to break down, they can be found everywhere. PCBs accumulate in the fat of people and animals.

Q: How do PCBs get into bodies of water in Illinois?

A: PCBs have been released into the environment through spills, leaks from electrical and other equipment, and improper disposal and storage. It is estimated that more than half of the PCBs produced have been released into the environment. Once in the environment, PCBs can be transported long distances. Besides water, they have been detected in air, soil and sediments throughout the world. PCBs last a long time in the environment before breaking down and may find their way into the food chain.

Q: How do fish become contaminated with PCBs?

A: After PCBs enter the environment, they are persistent and can travel long distances. PCBs bind tightly to sediments, thereby contaminating water bodies. Fish get PCBs in their bodies from living in water with contaminated sediment and by eating contaminated food, including smaller fish. PCBs build up in the fatty tissues of fish.

Q: Why does the state issue PCB advisories?

A: Advisories are issued to protect the most sensitive populations from adverse health effects. Studies have shown that exposure to PCBs can affect fetuses, nursing babies and children younger than 15 years of age. The advisories may be overprotective for women beyond childbearing age and for adult men.

Q: Why are there so many new advisories based on PCBs this year?

A: Samples must be collected two years in a row to add, change or remove an advisory from the list. Increased funding for the fish monitoring program in 1997 allowed more fish samples to be collected. Since then, many of the required follow-up samples have been collected. That is why there are 21 new bodies of water listed for PCB contamination.

Q: What are the potential health effects for people who eat fish contaminated with PCBs?

A: PCBs can cause short-term changes in the activity of the liver without any noticeable symptoms. Animal studies also suggest that PCBs can affect the immune, endocrine and reproductive systems, but these effects are uncertain in humans. USEPA has classified PCBs as probable human carcinogens (cancer causing chemicals), but there is no evidence that PCBs cause cancer at the low levels normally found in the environment.

Q: Are PCBs stored in the human body for long periods of time?

A: Yes. PCBs are easily absorbed by the body and are stored in fatty tissue. They are eliminated slowly from the body and it can take many years for them to be completely eliminated after exposure. Since PCBs are not eliminated well, they can build up in the body over time. While PCBs are stored mainly in the fat and liver, smaller amounts can be found in other parts of the body as well. For example, PCBs collect in milk fat and can enter the bodies of infants through breast-feeding.

Q: How can I reduce or prevent exposure to PCBs?

A: Exposure can be reduced by following IDPH's fish consumption advisories. Since PCBs are stored in the fatty areas of the fish, intake of PCBs can be reduced by removing the skin and fat from fish filets. Do not fry fish. Instead, barbecue, broil or bake fish on an elevated rack that allows fat to drip away. You also can poach fish if you discard the broth.

Q: What about the fish I buy in the grocery store?

A: Should I be concerned that they may be contaminated with PCBs? A: The U.S. Food and Drug Administration (FDA) regulates the fish that is sold in grocery stores. FDA has a testing program to sample some of the fish that is sold, but not all of the fish are tested. You should follow the advice for preparing and cooking fish to reduce your exposure to PCBs.

Q: Should I be concerned about children swimming in bodies of water in Illinois because of PCB contamination?

A: No. PCBs are not very soluble in water and tend to bind tightly to the sediment. Therefore, contact with, or accidental swallowing of the water will result in minimal exposure to PCBs.

Q: What is being done to reduce the amount of PCBs entering the environment from man-made sources?

A: PCBs have not been manufactured in the U.S. since 1979, but are present in equipment that was already produced. As this equipment is replaced, the level of PCBs will decrease. In addition, the Illinois Environmental Protection Agency requires that companies that transport, store or dispose of PCBs follow the rules and regulations of the federal hazardous waste management program.